CLAIMS:

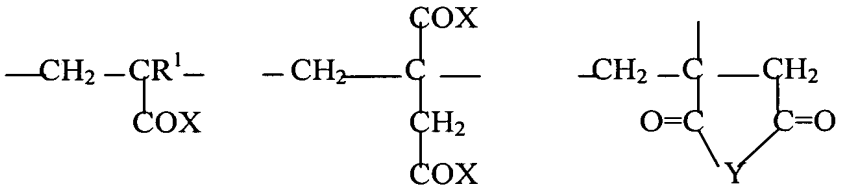
1. A fluidising admixture for use with sprayable cementitious compositions, the admixture consisting of

(1) 2-phosphonobutane-1,2,4-tricarboxylic acid;

(2) optionally, citric acid; and

(3) at least one polymer derived from ethylenically-unsaturated mono-or dicarboxylic acids, and characterised in that the polymer consists of

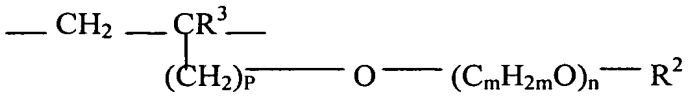
a) 51-95 mole % of moieties of formula 1a and/or 1b and/or 1c



Ia Ib Ic

wherein R^1 = hydrogen or a C_{1-20} aliphatic hydrocarbon residue;
X= O_a M, -O-$(C_m H_{2m}O)_n$-R^2, -NH-$(C_mH_{2m}O)_n$-R^2,
M = hydrogen, a mono-or divalent metal cation, an ammonium ion or an organic amine residue;
a=0.5 or 1;
R^2 = hydrogen, C_{1-20} aliphatic hydrocarbon, C_{5-8} cycloaliphatic hydrocarbon or optionally substituted C_{6-14} aryl residue;
Y= O, NR^2;
m= 2-4; and
n= 0-200

b) 1-48.9 mole% of moieties of the general formula II



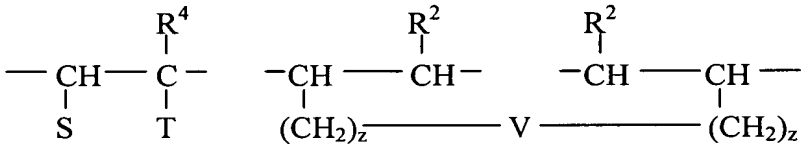
II

wherein R^3 = hydrogen or C_{1-5} aliphatic hydrocarbon;

p = 0-3; and

R^2 has the meaning given previously;

c) 0.1-5 mole % of moieties of Formulae IIIa or IIIb



IIIa IIIb

wherein S = H, $-COO_aM$, $-COOR^5$

T = U^1-$(CH(CH^3)-CH_2-O)_x$- $(CH_2-CH_2O)_yR^6$

-W-R^7

$-CO-[NH-(CH_2)_3]_s-W-R^7$

$-CO-O-(CH_2)_z-W-R^7$

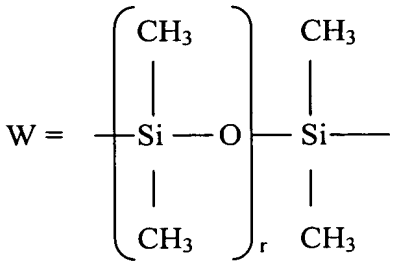
$-(CH_2)_z-V-(CH_2)_z-CH=CH-R^2$

= $-COOR^5$ when S is $-COOR^5$ or COO_a M

U^1 = -CO-NH-, -O-, $-CH_2O-$

U^2= - NH-CO-, -O-, $-OCH_2-$

V =-O-CO-C_6H_4-CO-O- or -W-



R^4 = H, CH_3

R^5 = a C_{3-20} alphatic hydrocarbon residue, a C_5-C_8 cycloaliphatic hydrocarbon residue or a C_{6-14} aryl residue;

$R^6 = R^2$, $-CH_2-\underset{\underset{R^4}{|}}{CH}-U^2-\underset{\underset{R^4}{|}}{\overset{\overset{S}{|}}{C}}=CH$

$R^7 = R^2$, $-[(CH_2)_3-NH]_s-CO-\underset{\underset{R^4}{|}}{\overset{\overset{S}{|}}{C}}=CH$

$-(CH_2)_z-O-CO-\underset{\underset{R^4}{|}}{\overset{\overset{S}{|}}{C}}=CH$

wherein

r = 2-100

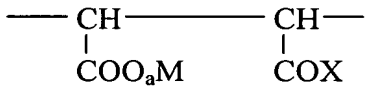
s = 1, 2

z = 0-4

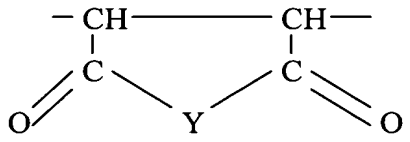
x = 1-150

y = 0-15

d) 0-47.9 mole % of moieties of the general formula IVa and / or IV b:



IVa



IVb

wherein a, M, X and Y have the significances hereinabove defined.

2. A fluidising admixture according to claim 1, in which

a) the moiety is according to formula Ia;

R^1, R^2 are independently H or CH_3;

$X= O_a M$, $-O-(C_m H_{2m}O)_n-R^2$

M = H or a mono-or divalent metal cation;

a = 1;

$Y= O, NR^2$;

m= 2-3; and

n= 20-150;

b) R^2, R^3 are independently H or CH_3; and

p = 0-1;

c) the moiety is according to formula IIIa;

S = H, $-COO_aM$, $-COOR^5$

$T = U^1-(CH(CH^3)-CH_2-O)_x-(CH_2-CH_2O)_yR^6$

$-CO-[NH-(CH_2)_3]_s-W-R^7$

$-CO-O-(CH_2)_z-W-R^7$

R^4, R^5 are independently H, CH_3;

$R^6 = R^2, -CH_2-CH(R^4)-U^2-C(R^4)=CHS$

$R^7 = R^2, -[(CH_2)_3-NH]_s-CO-C(R^4)=CHS$

$-(CH_2)_z-O-CO-C(R^4)=CHS$

wherein

$U^1 = -CO-NH-$, $-O-$, $-CH_2O-$

$U^2 = -NH-CO-$, $-O-$, $-OCH_2-$

x = 20-50;

y = 1-10; and

z = 0-2.

3. A fluidising admixture according to claim 2, in which

a) the moiety is according to formula Ia;

R^1 = H;

$R^2 = CH_3$;

$X = O_a M$;

M = a mono-or divalent metal cation;

Y= O, NR^2;

m = 2; and

n = 25-50;

b) R^2, R^3 = H; and

p = 0;

c) the moiety is according to formula IIIa;

S = H, $-COO_aM$;

T = U^1-(CH(CH^3)-CH_2-O)$_x$- (CH_2-CH_2O)$_y$$R^6$

-CO-O-$(CH_2)_z$-W-R^7

R^4, R^5 = H;

R^6 = R^2, -CH_2-CH(R^4)-U^2-C(R^4)=CH(S)

R^7 = R^2, -$[(CH_2)_3$-NH$]_s$-CO-C(R^4)=CH(S)

-$(CH_2)_z$-O-CO-C(R^4)=CH(S)

wherein

U^1 = -CO-NH-;

U^2= - NH-CO-, -O-, -OCH_2-

x = 20-50;

y = 5-10; and

z = 1-2.

4. A method of imparting flow to a cementitious composition, comprising the addition thereto of an admixture according to any one of claims 1-3.

5. A method of spraying a cementitious composition by preparing a cementitious mix and conveying the mix to a spray nozzle, there being added to the mix at preparation an admixture according to claim 1.